BELIEFS ABOUT PAIN CONTROL AND ACCEPTANCE OF ILLNESS IN PATIENTS SUFFERING FROM RHEUMATOID ARTHRITIS

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ABSTRACT

Introduction: Rheumatoid arthritis (RA) is a chronic disease accompanied by acute pain complaints, which often bring about a lack of acceptance of illness and various beliefs about pain control.
Aim of the study: The study was aimed at determining methods of pain control and the relationship between pain intensity, sociodemographic data, and acceptance of illness in people suffering from rheumatoid arthritis.
Material and methods: The study was conducted in a group of 80 patients suffering from rheumatoid arthritis. The study was carried out with the application of the Acceptance of Illness Scale (AIS), the Beliefs about Pain Control Questionnaire (BPCQ), the Numerical Rating Scale (NRS), and the authors' own questionnaire. The findings were statistically analysed by means of IBM SPSS, Statistica 20 software.
Results: An analysis of the study findings showed that a higher level of acceptance of illness coincided with better pain control, including personal resources, accidental events, and external factors. Internal locus of health control was observed mainly in the case of married respondents who suffered from the disease for less than six years. Contrasting results were found in the group of widowed patients and the ones who were diagnosed with the disease less than a year earlier, who tended to believe that accidental events and external factors have a bigger impact on their health. The influence of external factors was also prevalent in the group of respondents who suffered from the disease for about 15 years.
Conclusions: The level of acceptance of illness in patients suffering from rheumatoid arthritis is determined by their beliefs about pain control based on internal resources and doctors' influence.
Key words: rheumatoid arthritis, beliefs about pain control, acceptance of illness.

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic, systemic, inflammatory, autoimmune disease that affects connective tissue. It is characterised by non-specific inflammation of symmetric joints and accompanying changes and complications that frequently lead to disability [1–4]. Because of the chronic character of rheumatoid arthritis (RA), the aspect of the psychological dimension of patients' adaptation, which is indicated by the degree of acceptance of illness, becomes a matter of particular importance. At the same time, it provides information about consequences of the disease, which result from the patient's health condition and the consequent limitations [5–7].

AIM OF THE STUDY

The study was aimed at determining the methods of pain control and the relationship between pain intensity, sociodemographic data, and the acceptance of illness in people suffering from rheumatoid arthritis.

MATERIAL AND METHODS

The study was conducted in a group of 80 patients diagnosed with rheumatoid arthritis, who were hospitalised in the Independent Public Health Care Unit in Tomaszów Lubelski, from June to September 2017, most of whom were between 51 and 60 years old. The study was conducted by means of a diagnostic survey with the application of a survey technique. The data were collected with the application of the Acceptance of Illness Scale (AIS), the Beliefs about Pain Control Questionnaire (BPCQ), and the authors' own questionnaire, including socio-demographic questions.

The AIS is a research tool consisting of eight statements describing negative consequences of bad health condition, which record the patient's assessment of

Table 1. Locus of pain control assessed according to BPCQ scale

Patients	Internal control		Doctors' influence		Accidental events	
	M	SD	M	SD	M	SD
Authors' own study	15.51	6.28	16.15	3.74	12.50	5.36
Patients with degenerative changes*	17.41	5.05	17.84	3.73	16.36	4.31
Patients suffering from spinal pain*	19.50	5.76	18.10	3.94	17.10	4.90
Patients suffering from chronic pain*	17.79	4.16	18.00	2.52	15.92	3.72

*M – median, SD – standard deviation, *Juczyński's study 2012.*

Table 2. Acceptance of illness according to AIS scale

Patients	Total result in AIS scale	
	M	SD
Authors' own study	22.55	8.65
Patients suffering from chronic pain*	18.46	7.05
Patients suffering from spinal pain*	20.51	8.74

*M – median, SD – standard deviation, *Juczyński's study 2012.*

the degree of acceptance of limitations caused by the disease, self-efficacy, the sense of dependence on others, and the sense of one's own value. The statements included in the Acceptance of Illness Scale were evaluated on a 1–5 scale, where 1 (I totally agree) means a low adaptation to the disease and 5 (I totally disagree) means the acceptance of the current situation. The total score ranges from 8 to 40 points [8].

The study also applied the Beliefs about Pain Control Questionnaire (BPCQ) constructed by Skevington and adapted Juczyński. It consists of 13 statements belonging to three categories, which assess the importance of patients' particular beliefs about pain control belonging to the following groups of factors: internal, external, and accidental. There is a scale, which includes numerical partitions (from 1 for 6), where 1 means totally disagree, and 6 means totally agree. The score, ranging from 5 to 30, is a measurement of the control internal, and ranging from 4 to 24 is a measurement of the control external and accidental. A higher score is an indicator of stronger beliefs about pain control and is connected with the influence of a particular factor [8].

The intensity of the pain has been assessed employing following instrument: the Numeric Rating Scale (NRS), which includes numerical partitions (from 0 for 10); where 0 means lack of pain means, but 10 means pain for not abolishing, which allows determination of the degree of intensifying pain.

The findings were then subjected to statistical analysis. Verification of differences between variables was carried out by means of Mann-Whitney U test, Kruskal-Wallis test, and calculation of Spearman's rank (rho) correlation coefficient. The level of significance was assumed at $p < 0.05$. Calculations were conducted with the application of IBM SPSS, Statistica 20 software.

RESULTS

The study was conducted in a group of 59 women (74%) and 21 men (26%). The most numerous age group of respondents was made up by people aged between 51 and 60 years (n = 46; 57.5%). Another numerous group consisted of patients aged over 60 years (n = 20; 25%). As far as their marital status is concerned, most respondents were married (N = 68, 85.0%). Single and widowed respondents comprised only six patients (7.5%). Another dominant group consisted of countryside dwellers – 61 respondents (76.3%). Secondary education was reported by more than half of respondents (n = 43; 53.7%). Another big group consisted of people with vocational education (n = 31; 38.%).

Beliefs about pain control and in the group of examined patients

The dominant factors observed in the examined group of patients included the external influence (doctor's influence) 16.15 ±3.74, which accounted for the score ranging from 4 to 24, and the internal locus of health control 15.51 ±6.28 with the score ranging between 5 and 30 (Table 1).

Acceptance of illness in the examined group of patients

The average level of the acceptance of illness in the examined group of patients reached the score of 22.55 ±8.65. The scores ranged from 10 to 39, and half of the patients scored lower than 18. Interpretation of the findings was possible after verifying the level of acceptance of the disease by means of the Likert Scale. Position of test is expressed for appearance 5-punctual Likert's Scale, where 1 means a low adaptation to the disease, and 5 means the acceptance of the current situation. The most numerous group consisted of patients who did not accept their illness (27 respondents; 33.8%). Another group of 25 respondents (31.3%) declared that they tended to accept their illness. Only 12 patients (15.0%) fully accepted their health condition (Table 2).

Table 3. Intensity of pain and relief experienced as a result of applied treatment and strategies of pain control monitored according to BPCQ scale

Intensity of pain and relief		Internal factors	Doctors' influence	Accidental events
The most acute pain complaints experienced in the last 24 hours	Rho	0.054	0.073	–0.170
	p	0.6353	0.5181	0.1315
The slightest pain complaints experienced in the last 24 hours	Rho	–0.295	0.124	0.137
	p	**0.0079**	0.2730	0.2268
Pain complaints at the moment of examination	Rho	0.112	–0.360	–0.003
	p	0.3244	**0.0010**	0.9800
The level of relief experienced as a result of applied treatment in the last 24 hours	Rho	0.075	0.042	0.030
	p	0.5078	0.7122	0.7895

SD – standard deviation, Rho – Spearman correlation coefficient, p – statistical significance coefficient.

The relationship between pain intensity and the relief experienced as a result of applied treatment and beliefs about pain control

The average intensity of the most acute pain experienced by the respondents in the last 24 hours reached 5.59 ±1.50 on a 1–10 scale. The level of intensity ranged from 2 to 8, and the most frequent score was 6 in the group of 28 respondents (35.0%). The slightest pain complaints in the last 24 hours fluctuated at 3.04 ±1.28. The most frequent intensity of slight pain complaints was 3 in the group of 23 respondents (28.8%) (Table 3).

A weak but statistically significant correlation was observed between the slightest pain complaints experienced in the last 24 hours and an internal locus of pain control. The patients who reported lower pain intensity were also the ones who had higher internal sense of control over their pain (rho = –0.295; p = 0.0079). Moreover, the respondents who declared lower intensity of pain at the time of examination were also more likely to believe in the influence that other people had on the control of their pain (rho = –0.360; p = 0.0010) (Table 3).

The relationship between respondents' sociodemographic profile and their pain control

The studies showed that there was a significant difference (p = 0.0236) between male and female patients in the locus of pain control connected with the doctors' influence, with women being more likely to believe in the doctors' influence (16.56 ±3.88) than men (15.00 ±3.11). Further analysis proved a statistically significant correlation between respondents' age and particular strategies of pain control focused on the influence of external factors (p = 0.0407), internal factors (p = 0.0001), and accidental events (p = 0.0002) (Table 4).

Table 4. Selected sociodemographic variables from respondents' profiles and their strategies of pain control according to BPCQ scale

Intensity of pain and relief	Internal factors (*p*)	Doctors' influence (*p*)	Accidental events (*p*)
Sex	0.4027	**0.0236**	0.4849
Age	**0.0001**	**0.0407**	**0.0002**
Education	0.1553	0.3321	**0.0086**
Material status	**0.0410**	0.1969	**0.0398**
Place of status	0.1122	0.4649	0.6329

p – level of statistical significance, Kruskal-Wallis test, Mann-Whitney U test.

Another statistically significant difference was observed between groups determined by marital status as far as internal control (p = 0.410) and accidental events (p = 0.0398) connected with control of experienced pain were concerned. There was also a difference between education status and activities based on accidental events (p = 0.0086). No differences were observed between respondents' place of residence and their methods of pain control (Table 4).

Correlation between respondents' beliefs about pain control and their acceptance of illness

A positive correlation was observed between the level of acceptance of illness and the variety of activities undertaken by respondents and aimed at pain control, which means that strategies of pain control applied by patients with a higher level of acceptance of illness were based on their personal beliefs (p = 0.0001) (Table 5).

The findings also proved that in the case of patients with a lower level of acceptance of illness the locus of pain control was shifted towards activities of other people (p = 0.0005). Moreover, it was proven that the respondents who accepted their illness to a greater extent were less likely to attribute pain control to accidental events (Table 5).

Table 5. Respondents' acceptance of illness and their methods of pain control assessed on BPCQ scale

Acceptance of illness according to AIS scale		Internal factors	Doctors' influence	Accidental events
General AIS indicator	Rho	0.454	–0.380	–0.190
	p	**0.0001**	**0.0005**	0.0916

Rho – Spearman correlation coefficient, p – statistical significance coefficient.

DISCUSSION

Rheumatoid arthritis is a chronic inflammatory process of unknown aetiology, which may lead to destruction of joints and internal organs and even to disability. Numerous studies prove that RA patients are dissatisfied with their health condition, and as the disease develops and degenerative changes become more severe they tend to evaluate their quality of life and the level of acceptance of illness lower and lower [9].

There are no research papers focused on a correlation between beliefs about pain control and the level of acceptance of illness in RA patients. The authors' own studies showed that the acceptance of illness was on an average level. About 20% of the respondents definitely or rather did not accept their illness. Full acceptance of illness was declared by only 15% of the patients. Similar results were obtained by Wróbel and Majda [10].

The authors' own study included an analysis of correlation between beliefs about pain control and sociodemographic variables such as gender, age, marital status, education, or place of residence. A relationship was observed between respondents' age and their beliefs about pain control. A decrease in the intensity of internal locus of pain control and an increase in the locus of pain control involving the influence of other people and accidental events could be observed as the patients were growing older. Such a situation might be caused by reactions typical of all patients suffering from chronic diseases and connected with an increasing dependency accompanying the progression of the disease as well as the intensification of pathological changes in locomotive organs and decreased functional capacity of patients.

Similar results were obtained by Gettings, who emphasised the need for a multidisciplinary approach towards the problem of patients suffering from rheumatoid arthritis, which would involve both conventional and alternative methods of treatment. Such an approach is essential for an efficient and complex adjustment of patients' treatment to their individual needs [11].

The authors' own analysis showed a relationship between patients' gender and their beliefs about pain control. Women were more likely to believe in the doctors' influence on their health. The differences in the internal locus of pain control and the locus of pain control connected with accidental events were not statistically connected with patients' gender. Statistically significant differences were observed in married patients as far as their internal control of personal resources was concerned. On the other hand, contradictory results were obtained in widowed respondents, who tended to attribute pain control to accidental events. Respondents' place of residence had no impact on their locus of pain control, which coincided with the findings of the study conducted by Zielazny *et al.* [12].

Furthermore, a correlation was observed between the locus of pain control and the slightest pain complaints which occurred within the last 24 hours. The respondents with a higher internal locus of pain control tended to choose lower values of the slightest pain complaints (rho = –0.295). Similarly, the respondents who concentrated on the external factors tended to declare lower pain intensity at the time of examination (rho = –0.360).

The study by Wiśniewska *et al.* proved that gender has no significant impact on the strategies of pain control [13]. Contrasting results were obtained in the authors' own study, and they referred also to respondents age, education, and marital status.

On the other hand, Sztandera *et al.* observed that respondents' age has an impact on their locus of pain control connected with the influence of other people and accidental events. In addition, the aforementioned study proved that patients aged 60 years and over had significantly higher scores than other patients as far as the influence of external factors on pain control was concerned [14]. The same results were obtained in the authors' own study in a group of older patients in reference to the impact of accidental events on pain control.

Zielazny *et al.* in their study discovered correlations between the methods of controlling pain and patients' sociodemographic features. Respondents with higher education were less likely to believe in a significant impact of doctors on the level of experienced pain [12]. In addition, analyses conducted by these authors did not show a significant correlation between the level of acceptance of illness and the locus of health control.

The authors' own study showed that respondents with a higher level of acceptance of illness had also a lower level of the locus of pain control (rho = –0.380) as far as the influence of other people was concerned.

Comparable results were obtained by Karna-Matyjaszek *et al.*, who showed that a higher level of acceptance of illness was accompanied by a more efficient application of the internal resources of pain control and a lower level of belief in the influence of doctors [15]. The findings prove that acceptance of illness allows patients to take an active part in their therapy and improves their attitude to life.

The sense of control is connected with the awareness that people have a chance to have an impact on their own life. People with a dominant external locus of control are more likely to bow to the pressure of others. It has been proven that such people are often convinced about lack of influence on their condition, they experience helplessness and a state of low mood, which, in turn, results in a decrease of acceptance of their illness. Such a perception of pain leads to a passive attitude, which has a negative impact on pain control and simultaneously contributes to intensification of psychological discomfort. People with internal locus of control believe that their own life depends on them, and they take responsibility for their actions and decisions. Such an approach allows for a decrease in the level of experienced pain as well as an increase in its tolerance and, as a result, an attempt to deal with pain better and to cooperate with medical staff.

According to Wiśniewska *et al.*, the highest average values were obtained in the area of doctors' influence and the influence of accidental events on pain control. The respondents who experienced less pain had a lowered sense of internal locus of control [13].

The findings obtained in the study may mean that the internal sense of control has an impact on the course of treatment and cooperation with the doctor. On the other hand, the patients with an external locus of control tend to believe that the illness is somehow imposed on them and they have no hope for a change in this situation. Such a person finds it hard to cooperate with a doctor, which has a negative impact on the recovery process. In order to help the patient to shift the locus of health control from external factors to an internal sense, it is essential to pay attention to the role of the nurse in the process of the patient's adaptation to the circumstances brought about by the disease, including the methods of managing stress adapted to the RA patients' health condition [16].

CONCLUSIONS

It was most common for the locus of pain control to be based on the doctors' influence. The respondents who believed in their internal resources of pain control reported a lower intensity of slight pain. The locus of pain control focused mainly on the influence of doctors was more common in women than in men. The level of the acceptance of illness in the examined RA patients turned out to be average, and it decreased with the patients' age. A higher level of acceptance of illness correlated with a higher level of internal locus of pain control and a lower influence of external factors.

Disclosure

The authors declare no conflict of interest.

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